



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/577,932	05/25/2000	Shigeyuki Maruyama	000663	4823

23850 7590 05/06/2002

ARMSTRONG, WESTERMAN & HATTORI, LLP
1725 K STREET, NW.
SUITE 1000
WASHINGTON, DC 20006

EXAMINER

CHU, CHRIS C

ART UNIT	PAPER NUMBER
----------	--------------

2815

DATE MAILED: 05/06/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/577,932

Applicant(s)

MARUYAMA ET AL.

Examiner

Chris C. Chu

Art Unit

2815

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 February 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 - 5 and 13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 - 5 and 13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Art Unit: 2815

DETAILED ACTION

1. Applicant's amendment filed on February 22, 2002 has been received and entered in the case.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claims 1, 3 and 4 are rejected under 35 U.S.C. 102(e) as being anticipated by Shibata.
Regarding claim 1, Shibata discloses in Figs. 1 and 7 a semiconductor device comprising:
 - a semiconductor element (1) having a plurality of electrodes (5);

Art Unit: 2815

- a redistribution layer (8) having a plurality of electrode pads (7a) and conductive patterns (7c) connecting the electrodes (5) of the semiconductor element to the respective electrode pads (7a);
- a plurality of metal posts (9) formed on the electrode pads of the redistribution layer, the metal posts being configured to be provided with external connection electrodes (3); and
- at least one mark member, readable on any one of posts 9, which serves as an alignment mark located in a predetermined positional relationship with the metal posts,
- wherein the mark member is made of the same material as the metal posts.

Regarding claim 3, Shibata discloses in Figs. 1 and 7 a width of the alignment mark, readable on any one of posts 9, measured along a plane parallel to a surface of the redistribution layer being greater than a height of the metal posts.

Regarding claim 4, Shibata discloses in Figs. 1 and 7 a semiconductor device comprising:

- a semiconductor element (1) having a plurality of electrodes (5);
- a redistribution layer (8) which connects the electrodes (5) of the semiconductor device to electrode pads (7a) located in predetermined positions of the redistribution layer; and
- at least one mark member, readable on any one of posts 9, which serves as an alignment mark located in a predetermined positional relationship with the electrode pads,
- wherein the mark member is made of the same material with the electrode pads.

4. Claim 13 is rejected under 35 U.S.C. 102(e) as being anticipated by Ishikawa et al.

Ishikawa et al. discloses in Fig. 3 and column 5, lines 54 ~ 57 an apparatus for fixing a semiconductor wafer (26) by suction, comprising:

- a vacuum chuck table (70) having a porous plate overlaying a plurality of concentric suction grooves (78 A ~ 78D);
- a plurality of suction passages (80A ~ 80D) being connected to the plurality of concentric suction grooves, the plurality of concentric suction grooves (78A ~ 78D) being divided into a plurality of groups so that each of the plurality of suction passages is connected to one of a corresponding suction grooves belonging to one of the plurality of groups (see Fig. 3 and Fig. 4); and
- means for sequentially introducing a suctioning force into the suction passages (80A ~ 80D) at different timing.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2815

6. Claims 2 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shibata in view of Nara et al.

Shibata does not disclose the alignment mark having an outer configuration other than a circle. However, Nara et al. discloses in Fig. 5A an alignment mark (22a1) having an outer configuration other than a circle. Thus, it would have been obvious to one of ordinary skill in the art at the time when the invention was made to modify Shibata by using the outer configuration of the alignment mark being other than a circle as taught by Nara et al. The ordinary artisan would have been motivated to modify Shibata in the manner described above for at least the purpose of decreasing a time to detect the alignment mark (column 3, lines 4 ~ 7).

Response to Arguments

7. Applicant's arguments with respect to claims 1 ~ 5 and 13 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Art Unit: 2815

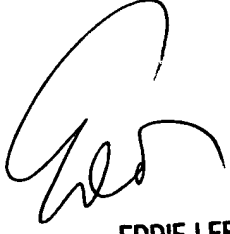
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chris C. Chu whose telephone number is (703) 305-6194. The examiner can normally be reached on M-F (10:30 - 7:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie C. Lee can be reached on (703) 308-1690. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7382 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Chris C. Chu
Examiner
Art Unit 2815

c.c.
May 2, 2002



EDDIE LEE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800